

# Inventors and Scientists: Louis Pasteur

By Biography.com Editors and A+E Networks, adapted by Newsela staff on 08.18.16

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A photograph of scientist Louis Pasteur. Photo: Félix Nadar

**Synopsis:** Louis Pasteur was born in France in 1822. He discovered a way to get rid of microbes. Microbes are tiny animals that are too small to see. To treat them, Pasteur invented pasteurization. This means heating and then cooling the microbes. Pasteur and his team also created many vaccinations. These make people resistant to certain diseases.

## Early Life

Louis Pasteur was a French scientist. He studied chemistry and microbes. Chemistry is the study of what matter is made of. Pasteur studied both science and the arts. He finished his university studies at the École Normale in Paris in 1847. After that, Pasteur worked and taught at Dijon Lycée. In 1848, he became a professor of chemistry at the University of Strasbourg. While there, he met Marie Laurent, and they married in 1849.

## **First Major Contribution In Chemistry**

In 1849, Louis Pasteur studied something called tartaric acid. This acid has a special property. It changes how light passes through it. Scientists can measure this change. Pasteur compared this with paratartaric acid. The two seemed to be the same because they were made of the same matter. However, paratartaric acid does not change how light travels. Pasteur concluded that the two must be different.

Pasteur decided to study paratartaric acid closely. He discovered that it is made of tiny crystals. These crystals look almost exactly the same. However, their shapes are mirrors of each other. Pasteur separated the two kinds of crystal into two piles. He discovered that the two had exactly opposite effects on light. When the two crystals were together, they canceled each other out. This proved that it is not enough to just know what matter is made of. The shape also has to be known.

## **Commercial Success**

In 1854, Pasteur worked on a different problem. He showed that microbes make wine, beer and even milk sour. He invented a way of removing these microbes. He boiled and then cooled the wine, beer or milk. This got rid of the microbes that were present. He completed the first test in 1862. Today, this is known as pasteurization.

In 1865, Pasteur took on yet another problem. Silkworm eggs are used to make silk. At the time, they became ill with an unknown disease. Pasteur discovered that microbes were the cause. He found a way to stop the contamination.

In 1879, Pasteur created new vaccines. He studied a disease called chicken cholera. He exposed his chickens to a weak form of this disease. The chickens did not stay sick. Instead, they were able to fight off the cholera. Pasteur went on to make vaccinations for other diseases. Some of these were tuberculosis and smallpox.

Pasteur worked in many important schools. At one time he decided to study rabies. Animals get rabies. In 1885, he treated 9-year-old Joseph Meister. The boy had been bitten by an infected dog. He was cured by Pasteur's vaccine. Because of this, Pasteur became instantly famous. As a result, the Pasteur Institute was built in 1888.

## **Personal Life**

Pasteur was celebrated by other well-known scientists. He kept working despite serious health problems. He died in 1895. Pasteur's remains were moved to the Pasteur Institute in 1896.

## Quiz

1 Louis Pasteur studied chemistry. How did his studies affect his scientific discoveries?

- (A) Through his studies, he met a mentor who would inspire him to create many inventions.
- (B) He used what he learned from his studies to discover the shape of paratartaric acid.
- (C) After Pasteur finished his studies, he realized that he needed to study vaccines and diseases.
- (D) When Pasteur studied chemistry, he helped another scientist complete work on microbes.

2 Why was Pasteur's study of chicken cholera important?

- (A) He suffered from chicken cholera while he studied the disease, and got very ill.
- (B) While studying chicken cholera, he realized that some diseases do not have a cure.
- (C) He used what he learned from studying chicken cholera to create other vaccines.
- (D) The chickens on his own farm had the disease, and without them Pasteur would have starved.

3 Read the following selection from the section "Commercial Success":

*He showed that microbes make wine, beer and even milk sour. He invented a way of removing these microbes. He boiled and then cooled the wine, beer or milk. This got rid of the microbes that were present. He completed the first test in 1862. Today, this is known as pasteurization.*

Based on this information, what does "pasteurization" mean?

- (A) the accomplishments and successful discoveries of Louis Pasteur
- (B) the use of certain kinds of microbes to make wine, beer, and milk taste sour
- (C) the creation of liquids that do not need microbes in order to stay fresh for long periods of time
- (D) the process of boiling and then cooling a liquid to get rid of microbes in the liquid

Read the following paragraph from the section "Commercial Success":

*Pasteur worked in many important schools. At one time he decided to study rabies. Animals get rabies. In 1885, he treated 9-year-old Joseph Meister. The boy had been bitten by an infected dog. He was cured by Pasteur's vaccine. Because of this, Pasteur became instantly famous. As a result, the Pasteur Institute was built in 1888.*

Which sentence from the paragraph means that many people quickly learned about Pasteur's discovery?

- (A) Pasteur worked in many important schools.
- (B) In 1885, he treated 9-year-old Joseph Meister.
- (C) Because of this, Pasteur became instantly famous.
- (D) As a result, the Pasteur Institute was built in 1888.

## Answer Key

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